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A NEW SPECIES OF ANTPITTA (FORMICARIIDAE: *GRALLARIA*) FROM THE EASTERN ANDES OF COLOMBIA

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ABSTRACT.—The Cundinamarca Antpitta (*Grallaria kaestneri* sp. nov.) is described from a locality at upper subtropical elevations of the eastern slope of the Eastern Andes of Colombia. It is a terrestrial bird of the understory of primary and secondary cloud forest, known from elevations of ca 1800–2300 m at the type locality; its vocalizations, foraging behavior, and probable breeding season are described. The closest relative of the new form appears to be the Santa Marta Antpitta (*G. bangsi*) of the Santa Marta mountains; in fact, *G. kaestneri* may be the present-day representative of the ancestral population that gave rise to *G. bangsi*. The probable distribution, and possible conservation measures for *G. kaestneri* are discussed. *Received 10 Dec. 1991, accepted 13 May 1992.*

ABSTRACTO.—Se describe *Grallaria kaestneri* sp. nov. de una localidad de la zona subtropical alta de la vertiente oriental de la Cordillera Oriental de los Andes de Colombia. Es un ave terrestre del sotobosque de selva nublada primaria y secundaria; en la localidad típica ha sido registrado entre ca 1800 y 2300 m de elevación. Se presentan datos sobre la época de cría, las vocalizaciones, y el comportamiento de forrajeo de la nueva especie, cuya pariente mas cercano parece ser *G. bangsi* de la Sierra Nevada de Santa Marta; incluso, *kaestneri* bien podría ser el representante actual de la población ancestral que dio origen a *bangsi*. Se discuten la distribución probable de *G. kaestneri*, y posibles medidas para la conservación de la especie.

The birds of the eastern slope of the Eastern Andes of Colombia remain poorly known, despite the proximity of this area to the city of Bogotá. Aside from sporadic, isolated collecting efforts far to the north in Boyacá (Olivares 1971, 1974), virtually all ornithological work on this slope has been concentrated along the old Bogotá-Villavicencio trail, or the present highway that follows essentially the same route (Chapman 1917, Olivares 1969). This area was also evidently an important source of “Bogotá” trade

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skins (Meyer de Schauensee 1964). However, it is important to note that the upper part of this area, including the old towns of Chipaque, Choachí, Une, Cáqueza, and Fómeque, is protected by high ridges to the NE from the moist winds blowing off the llanos, and has a dry, rain-shadow climate. As far back as 1913, Chapman (1917) was disappointed by the lack of forest in the region, until he had descended the Río Negro valley to ca 1100 m, on the last ridges above Villavicencio. Even at this early date, the land along the valley floor close to the old trail had been deforested, since for a century or more the trail had been the major trade route between Bogotá and the llanos. Thus, while the birds of the floor of the Río Negro valley have been thoroughly collected, the very wet forests on the adjacent high and very steep ridges have been all but unexplored ornithologically.

On 16 October 1989, Peter G. Kaestner, at the time the U.S. Consul in Bogotá, set out to explore a recently opened road from Monterredondo on the highway, to the town of El Calvario in the valley of the Río Guaitiquía in the department of Meta. From Monterredondo (elevation 1375 m), one of Chapman's old collecting stations, the road winds steeply up the precipitous ridge of the Cuchilla Llano Grande, eventually crossing the ridgetop at 3200 m before dropping down to El Calvario. On this ridge, patches of remnant forest extend down to 1700–1800 m near the road, and above 2000 m the area is largely covered by very wet cloud forest that extends up to the páramo line. Somewhat disturbed along the road, and broken by scattered pastures, the forest cover in the area has apparently changed little in extent since the first aerial photographs were taken of the area in the late 1960s (Instituto Geográfico Agustín Codazzi, Bogotá). In an area of disturbed forest at ca 2250 m, Kaestner heard an unfamiliar antbird song. Upon recording the song and luring the bird into view with playback, he found it to be an antpitta that he was unable to identify to any known species. Suspecting that the bird represented an undescribed form, Kaestner invited me to accompany him to the site on 19–20 May 1990. On this trip we obtained further observations on vocalizations and behavior, and after intensive efforts with playbacks, succeeded in obtaining a specimen, which left no doubt that the bird indeed represented a new species of *Grallaria*.

With Loreta Rosselli and Luis Miguel Renjifo, I returned to the site on 10–13 January 1991. We were able to obtain two more specimens, plus more extensive information on population densities, elevation range, and behavior of the bird, as well as additional recordings. Unfortunately, further field work in the area has been inadvisable due to an outbreak of guerrilla activity, and I feel it best to wait no longer before describing the new form as

***Grallaria kaestneri* sp. nov.**

CUNDINAMARCA ANTPITTA

HOLOTYPE.—Adult female, no. 30730 of the ornithological collection of the Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá; collected by F. G. Stiles and P. G. Kaestner (original number FGS 2746) on 20 May 1990 at an elevation of 2075 m, ca 3 km (7.5 km by road) ENE of Monterredondo, Municipio de Guayabetal, Depto. de Cundinamarca, Colombia. The type locality is almost exactly 50 km SE of the center of the city of Bogotá.

PARATYPES.—Two adult females, nos. 30731 and 30732 of the same collection; collected by F. G. Stiles, L. Rosselli, and L. M. Renjifo on 13 January 1991 at the same locality (original numbers FGS 2781, 2782).

DIAGNOSIS.—Most similar to the Santa Marta Antpitta (*Grallaria bangsi* Allen) of the Santa Marta mountains of N Colombia but considerably smaller and darker, the throat dull whitish with dark mottling instead of bright, immaculate buff, and with the olivaceous color below much more extensive, especially across the chest, with only a small immaculate whitish area on the center of the abdomen, and with the pale streaking of the breast and sides much narrower, essentially restricted to the feather shafts and not set off by narrow dusky borders (see Fig. 1). Comparative measurements of the type series of *G. kaestneri* and two specimens of *G. bangsi* are given in Table 1.

ETYMOLOGY.—I take pleasure in naming this species for Peter G. Kaestner, its discoverer, in recognition of his interest in Colombian ornithology and in appreciation of some fine field companionship. The English name refers to the Department in which the type locality is located, and which doubtless includes a significant part, if not the totality, of the range of the new species.

DESCRIPTION OF HOLOTYPE.—(Color names and numbers follow Smithe 1975, 1981). Crown, nape, back, and scapulars uniform dark olive green (near 48), the feathers with narrow sooty-black fringes and a faint but definite pattern of very fine blackish barring (apparent only in the hand). Lower rump and most upper tail-coverts similar in color but lacking the barring, thus appearing brighter olive-green; tips of longest tail-coverts dark brown; upperside of tail blackish-brown (223, raw umber). Greater secondary coverts, primary coverts, and remiges blackish on inner webs, edged broadly with rich brown (near 223B, verona brown) on outer webs, save that the tertials are darker (223A, mars brown). Lores and facial area dull white, tinged with dull yellowish (near 92, pale horn, but paler), the feathers with dusky bases and dull olive tips (43, grayish olive), producing a heavily mottled appearance; auriculars dull olive with fine pale horn shaft-streaks. Throat whitish, tinged with pale horn, and lightly mottled with grayish olive and dusky (near 119, sepia); feathers of upper chest whitish, broadly tipped with grayish olive; breast, sides, and flanks grayish olive with narrow dull whitish streaks along feather shafts, broadest on sides and flanks; center of abdomen dull white, tinged with pale horn; thighs more brownish (near 37, antique brown); vent to crissum dull olive-buff (near 119C, light drab), the longest under tail-coverts tipped dark brown (123, raw umber); underside of tail dark olive brown (28). Wing-linings cinnamon (near 39). Iris dark brown; maxilla black and mandible slate gray, both shading abruptly to white along tomia and at tip; legs and feet plumbeous to light purplish-gray (cf Fig. 1).

Adult female, ovary postbreeding, two ruptured follicles; old, wrinkled brood patch; skull 75% ossified; starting molt (primary 1 breaking sheath, 2 in sheath, rest old; traces of molt on body).



FIG. 1. Specimens of the Cundinamarca Antpitta (*Grallaria kaestneri*) (right) and the Santa Marta Antpitta (*G. bangsi*) (left). Note differences in size, throat pattern, ventral streaking, and extent of white on abdomen.

PLUMAGE VARIATION.—The plumage of no. 30731 is virtually identical to that of the type, while in no. 30732 the basal olive portions of the feathers of the breast and sides are slightly paler than the tips, producing a slightly smudgy appearance. No plumage variation was detectable among birds seen in the field, undoubtedly including individuals of both sexes (see below). Variation in measurements among the type series is slight (Table 1).

TAXONOMIC AFFINITIES.—The classification of the antpittas (subfamily Grallariinae) was most recently revised by Lowery and O'Neill (1969), who provided the first comprehensive diagnoses for all genera of the group (*Pittasoma*, *Grallaria*, *Myrmothera*, *Hylopezus*, *Grallaricula*), as well as for the subgenera of *Grallaria* (*Grallaria*, *Thamnocharis*, *Hypsi-bemon*, and *Oropheus*). Placement of *kaestneri* in *Grallaria* is supported by its Type 3 (2-notched) sternum, evident in body skeletons prepared from the paratypes, as well as its distinct tarsal scutellation, including the plantar surface, its distinct but slender rictal bristles, and overall size and proportions. Among the subgenera of *Grallaria*, *kaestneri* is best assigned



FIG. 1. Continued.

to *Hypsibemon* Cabanis on the basis of its tarsal scutellation, 12 rectrices, and ratios of wing, tail, and tarsus lengths (Table 1, cf Lowery and O'Neill 1969). However, it is smaller than any other species of this subgenus, and the streaking is much less broad and conspicuous on the underparts. Moreover, one of the supposed diagnostic characters of *Hypsibemon*, pale shaft-streaks on the dorsum, is quite lacking not only in *G. kaestneri*, but also in all individuals of *G. bangsi* and most of the Chestnut-crowned Antpitta (*G. ruficapilla*) (in a few there are faint suggestions of shaft-streaks) I have seen. On the other hand, the narrow sooty fringes and faint dark barring of the dorsal feathers of *kaestneri* are shared by *bangsi*; the barring is also faintly suggested in *ruficapilla*, as well as in several species of the subgenus *Grallaria* (*alleni*, *guatemalensis*, *squamigera*), but not in any of the species of *Oropezus* I have examined (*flavotincta*, *hypoleuca*, *rufula*, *rufocinerea*, or *quitensis*). This, plus the close approach of the measurements of *Grallaria* and *Hypsibemon*, suggests that these subgenera are closely related and should be adjacent to one another in the sequence, not separated by *Thamnocharis* as in Lowery and O'Neill (1969).

TABLE 1

MEASUREMENTS^a OF THE TYPE SERIES OF *GRALLARIA KAESTNERI*, AND OF TWO SPECIMENS OF *G. BANGSI*

	<i>G. kaestneri</i> ^b				<i>G. bangsi</i> ^c	
	ICN 30730 (holotype)	ICN 30731 (paratype)	ICN 30732 (paratype)	\bar{X}	IND 0934	IND uncat.
Exposed culmen (mm)	20.0	17.8	19.5	19.1	21.8	22.5
Total culmen (mm)	21.4	22.4	23.1	22.3	25.7	26.2
Commissure width (mm)	11.5	11.3	11.4	11.4	16.6	16.7
Bill depth at nostril (mm)	6.2	6.1	6.2	6.2	8.8	7.9
Wing chord (mm)	80.3	80.5	78.7	79.8	95.6	91.3
Tail length (mm)	41.3	42.6	44.6	42.8	51.3	50.5
Tarsus length (mm)	42.2	44.7	43.0	43.4	50.2	51.2
Mass (g)	49.4	45.8	47.4	47.5	62.0	
Ratio tail/wing	0.51	0.53	0.56	0.53	0.54	0.55
Ratio tarsus/tail	1.02	1.05	0.96	1.01	1.02	0.99
Ratio tarsus/wing	0.53	0.56	0.55	0.55	0.53	0.56

^a All measurements made according to Baldwin et al. (1931). All birds were females except IND 0934 which was a male.^b ICN = Instituto de Ciencias Naturales, Universidad Nacional de Colombia.^c IND = UNIFEM, Inderena. One other *G. bangsi* (IND 0932), a fledgling male, was examined; its measurements are not given as the bird obviously was not full grown.

The species most similar to *G. kaestneri* is undoubtedly *G. bangsi*, which is also probably its closest relative. Interestingly, *G. bangsi* was also one of the few species endemic to the Santa Marta mountains that Todd and Carriker (1922) considered to have no close relative in either the Colombian or Venezuelan Andes. It is possible that *G. kaestneri* is the present-day representative of the ancestral population that gave rise to *G. bangsi*, possibly reaching the Santa Marta range during a cool period of the Pleistocene. The affinities of *G. bangsi* would thus lie with the Andes of Colombia rather than with those of Venezuela, unlike the majority of subtropical-zone endemics of the Santa Marta range (Todd and Carriker 1922).

VOCALIZATIONS.—Two vocalizations have been heard from *G. kaestneri*: a loud 3- or (rarely) 2-note phrase that undoubtedly constitutes the territorial advertising song; and a piercing double note, given most frequently in response to playback of the song but also occasionally in response to other loud noises, that is probably an aggressive call. Two of the females of the type series were decoyed in to close range by playback of the song; both gave the aggressive call but were not observed to sing. On two other occasions a singing bird was attracted to very close range by playing back the song, but neither of these birds could be captured; one of the birds almost certainly gave the aggressive note as well as the song. If the latter birds were males, it is possible that only males sing, but both sexes give the aggressive call.

The song (Fig. 2A) comprises 3 similar sharp, clear whistled notes that sound like *wirt, wiirt weert!*, although occasionally the final note is omitted. The full 3-note song occupies about 1 sec; the interval between the first and second notes is longer (ca 0.5 sec) than that between the second and third (ca 0.35 sec). Each successive note is slightly longer (0.14, 0.16, and 0.18 sec) and higher in pitch (ca 2.5, 2.8, and 2.9–3.0 KHz). For comparison the song of *bangsi* is described as “. . . a frequently heard, loud, flat *bob white*, reminiscent of a bobwhite's whistle but not strongly upslurred” (T. B. Johnson, in Hilty and Brown 1986).

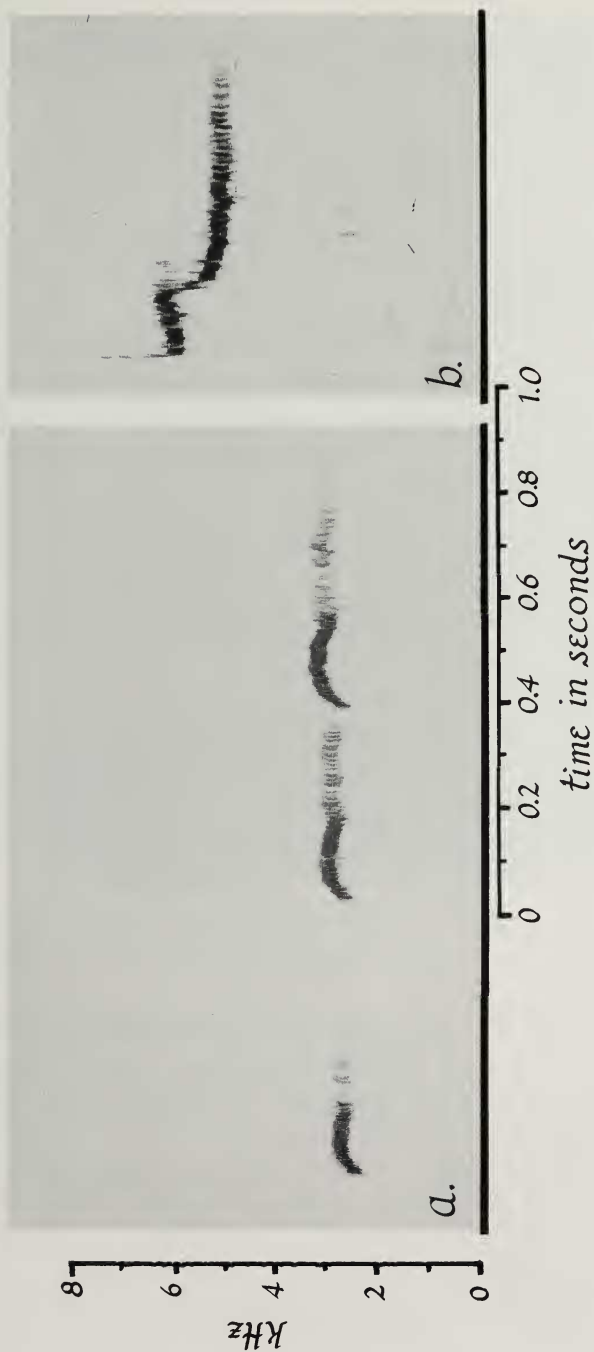


FIG. 2. Vocalizations of the Cundinamarca Antpitta. (a) Territorial song (typical 3-note version; rarely, the last note is omitted). (b) Probable aggressive call.

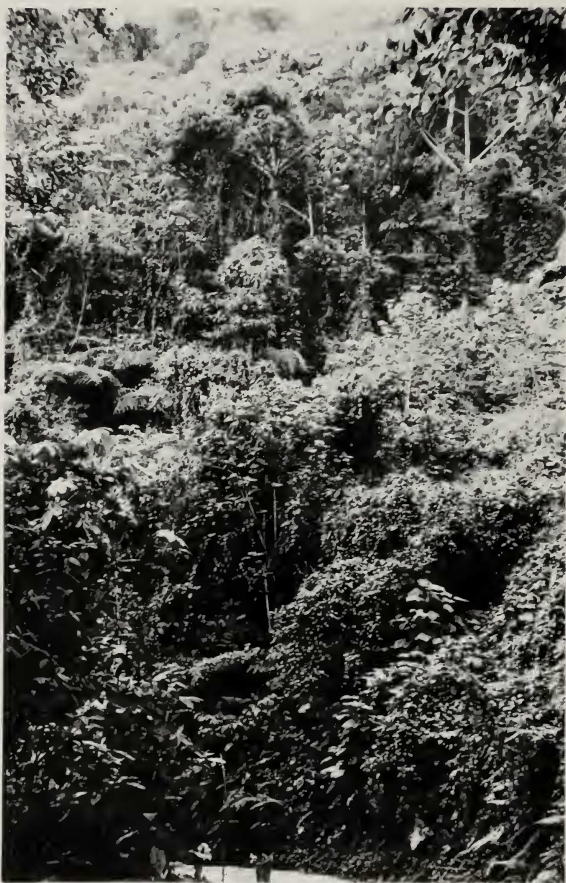


FIG. 3. Habitat of the Cundinamarca Antpitta at the type locality. Note the steep slopes and broken canopy of the forest, with many vines festooning the numerous gaps.

This song thus may not differ greatly from the rare two-note variant of the song of *G. kaestneri*.

The aggressive call (Fig. 2B) is considerably higher in pitch, with a first note at 5.8–6.0 Khz, falling abruptly to a longer note at ca 5.0 Khz. This call sounds like *SEElee*, the first part in particular being very sharp and piercing.

Similar vocalizations, a loud territorial song and a shorter, sharper note given in response to playback of the song, are given by *G. ruficapilla*, also of the subgenus *Hypsibemon*. The song of this species is the well-known *compra-PAN* or *c'CU-po-PAA* (the first note is very brief and soft, and audible only at close range), but a sharp *pyuu* is given in response to playback of the song, especially at close range (cf also Fjeldsa and Krabbe 1990).

ECOLOGY AND BEHAVIOR.—Along the Monterredondo-El Calvario road, *G. kaestneri* occurs in a relatively narrow elevation band, roughly between 2000 m (where the first continuous forests begin) to about 2300 m. The forests of this zone (Fig. 3) have been lightly

to fairly heavily disturbed, such that in many areas second-growth trees (*Heliocarpus*, *Cecropia*, *Trema*, *Alnus*, *Casearia*, etc.) predominate over primary forest elements like Lauraceae, Sapotaceae, *Hyeronima*, *Sapium*, *Billia*, etc. Due to the steep slopes, frequent natural tree-falls, and occasional extraction of timber trees, the canopy is very broken and irregular; larger trees reach 20 m in height, with occasional emergents (probably remnants of the original primary forest) reaching 30 m. In the numerous gaps and openings in the canopy, dense thickets have grown up, dominated by shrubs and small trees (Urticaceae, Compositae, Rubiaceae, *Siparuna* and *Piper*), bamboos (*Chusquea*), large-leaved herbs (Araceae, Marantaceae, Cyclanthaceae, *Heliconia*), and vines, which also festoon many of the trees at the edges of the gaps (Fig. 2). Palms (*Geonoma*, *Chamaedorea* and *Prestoea*) and tree-ferns are numerous, as are moss and epiphytes (especially orchids, aroids, and bromeliads), indicative of the heavy rainfall and frequent cloud cover in the area. Dense, dark, and virtually impenetrable in older gaps, the understory is fairly open under a closed canopy of taller trees.

G. kaestneri is fairly common in this area, preferring dense, dark understory around the edges of gaps, under a broken to fairly closed canopy. In the ca 5 ha where we have concentrated our observations and collecting, at least four pairs were detected by song on 12–13 Jan 1991 (assuming that a singing bird represents the male of a pair, as explained above). Along 1.5 km of road between this area and the uppermost site at which we heard *kaestneri* singing, at about 2300 m, an additional 10 pairs were detected on these dates. Similar densities were observed by Kaestner in October 1989, and by Kaestner and me in May 1990. To judge from distant songs heard in the early morning hours, the distribution of *kaestneri* extends down to 1800 m or lower on adjacent ridges where disturbance has been less, and forest cover extends considerably lower.

A very terrestrial antpitta, *G. kaestneri* rarely ascends to perches a meter or more above ground, even to sing (unlike *G. ruficapilla*, which frequently sings from perches at eye level or higher). Within its dense habitat, the bird is not particularly shy, and may approach a motionless observer closely. On 12 Jan 1991 I observed a foraging bird at a distance of 2–4 m for nearly a minute. The bird advanced over the ground with long, springy hops, pausing to rummage with the bill in patches of leaf litter, especially in a fallen bromeliad, from which it extracted a 2 cm long blackish beetle that it beat vigorously against a vertical stem before swallowing; it also dug briefly with the bill in a patch of soft ground at the base of a shrub, but without capturing any prey. On 24 June 1990, Kaestner observed a bird turning over leaves in the ground litter, presumably searching for prey. Stomach contents of the three specimens contained mainly insect parts (beetles, roaches, a katydid) with several spider poison claws and the remains of a small earthworm.

None of the three specimens collected was in breeding condition, and two were definitely postbreeding (old brood patches, atretic follicles). The type, taken in May, was starting molt, while of those taken in January one was in worn plumage, the other was completing primary molt. Singing activity in the population was rather low in May 1990, higher in January 1991; according to Kaestner, the birds were singing “much more” in October 1989 than during our visit in May; in two other visits to the area he noted very little singing on 20 January 1990, but high in June. The breeding season of *G. kaestneri* thus falls mainly or entirely in the second half of the year in the study area, which coincides with the middle and end of the rainy season in the Eastern Andes (cf Hilty and Brown 1986).

Also common in the same areas as *G. kaestneri* was its relative, *G. ruficapilla*, a somewhat larger bird that is more partial to scrub habitats (cf Hilty and Brown 1986). One could often hear the two species singing in close proximity, but *G. ruficapilla* was always in the dense low growth in new gaps with no tree cover, while *G. kaestneri* was in the adjacent forest or old second growth, under at least a partial canopy.

The true extent of the geographic range of *G. kaestneri* is unknown, since the bird is as yet known only from the type locality, but it could be fairly continuous along the eastern face of the Eastern Andes, given the lack of ornithological exploration and difficult access to the cool, very wet middle elevations that it evidently prefers. Considerable forest remains at these elevations in many areas along this slope, although below about 1500–2000 m most forest has been cut (J. Hernández-Camacho, pers. comm.). The ability of *G. kaestneri* to occupy fairly heavily disturbed forest and old second growth is encouraging, since this suggests that as long as some tree cover is maintained, the bird may be resistant to local extirpation. A further indication of the lack of ornithological exploration on this slope has been our discovery of several other species along the Monterredondo-El Calvario road, that heretofore were unreported from the Eastern Andes (e.g., *Phaethornis symmatophorus*). Further field work and possible conservation measures in the area of the Farallones de Medina, some 50 km NE of Monterredondo, where continuous forest extends down to ca 1000 m, seem urgently indicated.

DISCUSSION

It is interesting that of the new species of South American birds discovered and named in recent years, a very high proportion belong to the family Formicariidae, and no less than four are *Grallaria* antpittas: *G. eludens* (Lowery and O'Neill 1969), *G. carrikeri* (Schulenberg and Williams 1982), *G. blakei* (Graves 1987) and *G. kaestneri* (this study). Given that several other species of the genus are extremely poorly known (e.g., *G. milleri* and *G. alleni* in Colombia), the time seems ripe for a more detailed study of the genus, with particular attention to voice. Since these birds are much more often heard than seen in the dense vegetation they inhabit, and respond readily to playback, experiments along the lines of those of Lanyon (1963) may help to define relationships and establish species limits among related forms that show pronounced vocal differences (e.g., *G. hypoleuca* and *flavotincta*, cf Hilty and Brown 1986). Moreover, such experiments may help to evaluate the taxonomic significance of vocal differences, with little morphological differentiation, among populations of certain species (e.g., the Eastern and Central Andean forms of *G. quitensis*, or the Colombian and Peruvian forms of *G. rufula* [cf Fjeldsa and Krabbe 1990, Graves 1987]).

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COLOR PLATE

The frontispiece painting by Eugenia Breiva has been made possible by an endowment established by George Miksch Sutton.